

Appl. No. 10/518,825
Amdt. dated Jan. 28, 2008
Reply to Office action of Oct. 30, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend Claims 1-9 and add Claims 10-21 as follows:

Listing of Claims:

Claim 1 (currently amended): An optical signal processing device equipped with a source of electromagnetic radiation of variable intensity, an non-linear optical component, the optical component which comprises at least one photoluminescent carbon nanotube, configured to emit light at wavelengths varying non-linearly with the intensity of said light and with further comprising a means of detecting electromagnetic radiation.

Claim 2 (currently amended): ~~An~~ The optical signal processing device ~~as claimed in~~ of claim 1, characterized ~~in that~~ wherein the ~~non-linear optical component~~ comprises a substrate and a layer having a number of photoluminescent carbon nanotubes.

Claim 3 (currently amended): ~~An~~ The optical signal processing device ~~as claimed in~~ of claim 2, characterized ~~in that~~ wherein the non-linear optical component further comprises an intermediate layer between substrate and the layer having a number of photoluminescent carbon nanotubes.

Claim 4 (currently amended): ~~An~~ The optical signal processing device ~~as claimed in~~ of claim 1, characterized ~~in that~~ wherein the electromagnetic radiation is monochromatic coherent laser light.

Claim 5 (currently amended): ~~An non-linear~~ optical component having at least one photoluminescent carbon nanotube configured to emit light at wavelengths varying non-linearly with the intensity of said light.

Claim 6 (currently amended): ~~A~~ The non-linear optical component ~~as claimed in~~ of claim 5, characterized ~~in that~~ wherein the carbon nanotube has a thin film coating.

Claim 7 (currently amended): ~~A~~ The non-linear optical component ~~as claimed in~~of claim 5, ~~characterized in that~~wherein the carbon nanotube is embedded in a non-oxidizing matrix.

Claim 8 (currently amended): ~~A~~ The non-linear optical component ~~as claimed in~~of claim 5, ~~characterized in that~~wherein the carbon nanotube is embedded in a non-oxidizing matrix, which is transparent for electromagnetic radiation.

Claim 9 (currently amended): ~~A~~ The non-linear optical component ~~as claimed in~~of claim 5, ~~characterized in that~~wherein the carbon nanotube is embedded in a non-oxidizing, flexible matrix.

Claim 10 (new): The optical component of claim 5, wherein the at least one photoluminescent carbon nanotube emits light at wavelengths over the range from 600 to 700 nm.

Claim 11 (new): The optical component of claim 10, wherein the wavelength varying non-linearly with the intensity of said light reaches a maximum at a wavelength in the range from 600 to 800 nm.

Claim 12 (new): The optical signal processing device of claim 11, wherein the wavelength varying non-linearly with the intensity of said light reaches a maximum at a wavelength in the range from 600 to 700 nm.

Claim 13 (new): The optical signal processing device of claim 1, wherein the at least one photoluminescent carbon nanotube emits light at wavelengths over the range from 600 to 700 nm.

Claim 14 (new): The optical signal processing device of claim 13, wherein the wavelength varying non-linearly with the intensity of said light reaches a maximum at a wavelength in the range from 600 to 800 nm.

Claim 15 (new): The optical signal processing device of

claim 14, wherein the wavelength varying non-linearly with the intensity of said light reaches a maximum at a wavelength in the range from 600 to 700 nm.

Claim 16 (new): An. optical device comprising at least one photoluminescent carbon nanotube configured to emit, in response to an input of electromagnetic radiation, light over a range that includes wavelengths from 600 to 700 nm.

Claim 17 (new): The optical device of Claim 16 wherein the wavelengths vary non-linearly with intensity of the electromagnetic radiation

Claim 18 (new): The optical device of Claim 16 wherein an intensity of emitted light reaches a maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm.

Claim 19 (new): The optical device of claim 16, wherein the at least one photoluminescent carbon nanotube is

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comprised in a component including a substrate and a layer on the substrate comprising the at least one photoluminescent carbon nanotube.

Claim 20 (new): The optical device of claim 19, wherein the component further comprises an intermediate layer between the substrate and the layer comprising the at least one photoluminescent carbon nanotube.

Claim 21 (new): The optical device of claim 16, wherein the electromagnetic radiation is monochromatic coherent laser light.